ALGEBRA2 CLASS PERIOD_____ MS.SHIN NAME: _____

COMPLETING THE SQUARE

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It is possible to take any quadratic equation, create a perfect square trinomial, and solve it in a similar way. This method is called **completing the square.**

1.	**REWRITE** as $ax^2 + bx = c$
2.	**DIVIDE** both sides by "***a***" (leading coefficient) so it becomes $x^2 + bx = c$
3.	**COMPLETE THE SQUARE** by taking half of b, square it, and add it to both sides of the equation.
4.	**FACTOR** the perfect square
5.	Take the **SQUARE ROOT** of both sides. This will create 2 cases because a square root has both a positive and negative value.
6.	**SOLVE** both equations. SIMPLIFY all irrational and complex answers

Directions: Solve each quadratic equation below by completing the square

1. $x^2 - 18x + 56 = 0$

Solution:

2. $2x^2 - 16x = -30$

Solution:

3. $x^2 + 16x - 21 = -5$

Solution:

4. $3x^2 - 30x = 69$

Solution:

5. $x^2 + 12x + 43 = 0$

Solution

6. $4x^2 + 76 = 16$

Solution